

LCM Lesson Plan: **Looking At Leaves**

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Standards: Science A12, A14a, A14b Language Arts D1d, Art A3  
Cultural E1

Grade Level: 3<sup>rd</sup>-5<sup>th</sup>

Science Concepts: Populations of organisms exhibit variations in size and structure as a result of their adaptation to their habitat.

Science Vocabulary: pinnate, palmate, parallel, broadleaf, simple, compound, lobed, veins

Gear Up: Introduce the walk to Jordan Creek by sharing these words on a transparency from The Wisdom of the Native Americans: "The spirit of the Native people, the first people, has never died. It lives in the rocks, and the forests, the rivers, and the mountains. It murmurs in the brooks and whispers in the trees. The hearts of these people were formed of the earth that we now walk, and their voice can never be silenced." – Kent Nerburn

Discuss what these words mean, and then talk about the walk in the forest they will take to Jordan Creek. Ask them to look for signs of change, and to find two leaves to bring back to class. Return to class, report on the observations made, and share the leaves selected.

Process Skills: Observation, communication, questioning

Explore: Students choose a leaf to examine closely. They may use one they found on the hike or choose one from the class collection. Vocabulary words are brainstormed to describe their leaves. The words are written on the white board for the students to use in their subsequent writing. New vocabulary is introduced such as simple, compound, palmate, pinnate, conifer, broadleaf, parallel, and vein. Students compare their leaf to the new descriptive vocabulary. Then they draw the leaf, describe it in as much detail as possible, and measure its size and area on the centimeter grid paper in their Science Journals.

Process Skills: Observation, communication., measurement

Generalize: A class discussion follows the journaling. Questions such as Who has the smallest leaf, the largest leaf? How do you know it's the largest? How do you know if your leaf is a simple or compound leaf? Is your leaf a conifer, broadleaf, or palm? Does it come from a spruce or a hemlock? Does your leaf come from a tree that grows in Juneau? Why did you come to that decision? The students can generate their own questions to ask the class.

Process Skills: Communication, Classification, Questioning, Inferring

Apply: Students in groups make a Venn diagram using their leaves plus another 5 chosen from the class collection. Using three hoola hoops, they decide on categories, place the leaves in the appropriate circle, and label the circles with 3x5 cards. Once every group has finished their Venn on the floor, the groups will rotate around the room to observe how everyone has chosen to classify their leaves. They may want to collect data on the different categories that were chosen, and tally the number of times those categories were used.

Process Skills: Communication, Classification

Assess: Students discuss the results of the Venn. Then they individually complete a Science Log Data Sheet on Comparing Leaves. The log requires them to use 6 different leaves, divide them into Group A and Group B, record their observations on a table, and respond to statements such as How are the leaves in Group A and Group B the same and different from each other.

Process Skills: Communication, Classification, Inference

Extensions: Students complete a leaf activity. First they draw five leaves of any shape about the size of a fist on a white piece of paper, using as much of the space as possible. Using a Sharpie they trace around their leaves. Then wet each leaf and paint with watercolors each leaf at least two fall colors. Let the papers dry. The next day, wet the background, and then paint it with reds, blues, pinks (sunset colors)  
Other possible extensions are leaf rubbings, and using wax paper and iron to press leaves.

## Looking at Leaves Scoring Guide

Activity	Level 1	Level 2	Level 3	Level 4
Hike to Jordan Creek	Students are unfocused, inattentive to making observations.	Students make some observations, but do not return with leaves.	Students make observations and return to class with one leaf.	Students share the observations they make, and find two different leaves.
Science Journal	Drawing of the leaf is inaccurate. There is no measurement of the leaf. Description of the leaf is limited.	Drawing of the leaf is detailed, but measurement is missing. Description is limited to a sentence.	Students draw a detailed picture of the leaf, and measure its size. There is a short description of the leaf.	Students draw a detailed picture of their leaf, measure the area and size, and describe their leaf using new vocabulary words.
Venn Diagram	Students do not work well as a group. Task requires teacher intervention. Circles are not labeled.	Students struggle with the group work, but complete the task. Circles are labeled. Categories are common.	Students mostly work as a group to accomplish the task. Circles are labeled. Categories are common.	Students work as a group to accomplish the task. Circles are labeled. Critical thinking is apparent.
Science Log Data Sheet	Data table is incomplete without pictures or observations. Comparisons are not completed.	Data table is completed, but responses to questions are inaccurate or incomplete.	Data table is mostly completed with drawings or descriptions. Questions are answered but in simpler terms.	Data table is completed with detailed drawings or descriptions. Responses show insightful comparisons using scientific vocabulary.